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ABSTRACT

This collection contains the following articles on teaching with technology by faculty and staff at Indiana State University: (1) "Confessions of a Low-Tech Social Scientist" (James Schellenberg); (2) "The New Learning Curve: Creating Online Courses" (Faye Bradshaw); (3) "Practicing What We Preach: The Transformation of a Faculty Development Program" (Sharon Guan); (4) "Adding Realism via the Virtual: My Experience Using the Internet To Authenticate French Courses" (Christine Salmon); (5) "Enhancing Learning: Web Course Delivery and MERLOT" (Susan Moncada); (6) "Never Follow a Banjo Act with Another Banjo Act" (David A. Gilman); (7) "From Classroom to Computer: An Experience in Internet Teaching" (Georgia Hambrecht); (8) "Distance Education Changing and Expanding: Reborn To Increase Access to Higher Education Opportunities" (Thomas Sawyer); (9) "Transforming the Abstract to the Concrete via the Web" (Betsy Frank); (10) "First Time Experience Teaching a Course Online" (Veda Gregory); (11) "Curriculum Process in Nursing: An Online Course" (Ann Tomey); (12) "A Technical Class via Distance Education? How I Make It Work for the Student" (David Malooley); and (13) "Linking Audio to a Web Site" (Jeffrey McNabb). (Contains 265 references.) (MES)

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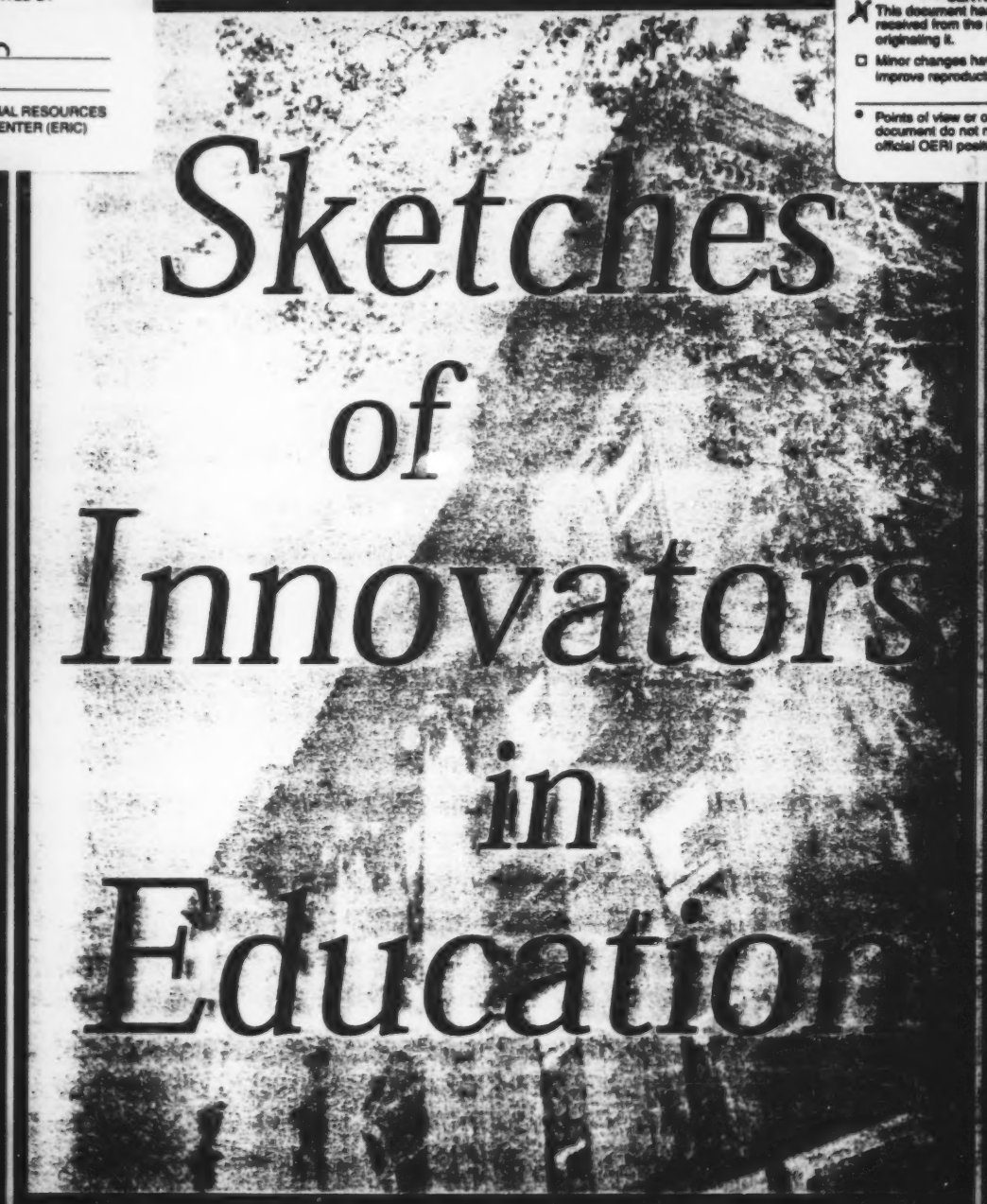
Sketches of Innovators in Education



A Collection of Articles on Teaching with Technology
by Indiana State University Faculty and Staff

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Sketches

of Innovators in Education

A Collection of Articles on Teaching with Technology
by Indiana State University Faculty and Staff

Indiana State University

http://indstate.edu/lifelong/sketches

Third editon (2001)

"Five years ago, when I returned to school for my master's degree, I had never used a Window's program.

Today, I compose spreadsheets, set up databases, and do a great deal of research online utilizing remote access to libraries.

The work that I have done has provided me with the exposure to possibilities I had never dreamed of before.

Technology has forced me to stretch; to get out of my comfort zone."

—Sharon Thobaben
Doctoral Student
Ph.D. in Technology Management
Indiana State University

About *Sketches*

Sketches of Innovators in Education is a collection of articles in which Indiana State University faculty and staff discuss their experiences developing courses and teaching with educational technologies. This edition features contributions by faculty from every academic college and school, and a special series of articles by members of the University's Instructional Design Team. Hopefully, this array offers a representative sampling.

In support of our faculty, the University offers the Course Transformation Academy (CTA), a faculty development program. CTA workshops are a University-wide effort. Contributors include staff from the Center for Teaching and Learning, the Cunningham Memorial Library, the Faculty Computing Resource Center, Information Technology, and the Office of Distance Education and Faculty Development. Moreover, each workshop features special mentoring sessions in which faculty pioneers from various academic departments share their experiences teaching with educational technologies. For more information on the CTA, refer to Dr. Sharon Guan's article: *Practicing What We Preach: The Transformation of a Faculty Development Program* (page 13).

Our goal is to share creative approaches to teaching and learning. Please contact our office if you wish more information on the Course Transformation Academy or the University's Distance Education Program.

—**The Staff**

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Course

- Conflict Resolution: Theory and Research

Confessions of a Low-Tech Social Scientist

I am still not at home in our computer age. I do not know what people are talking about when they discuss computer hardware, and I always need special help when I start to use a new kind of software. I was a long holdout against e-mail, and I still receive it only at school, keeping me unbothered at home by a flurry of e-mail messages. I am not a Web surfer. Basically I use the Web only when I have a specific objective in mind. Yet, despite all this, I now find myself as the instructor of a Web-based course. How this came to be I would like to recount in these "confessions."

It certainly did not happen suddenly. It happened through a cumulative sequence of events over a period of years. These events might be summarized in terms of the following key developments: the program; the book; the television course; and getting on the Internet.

The Program

I have been teaching courses in social conflict for more than 35 years. I did this primarily as a scholar, not as a social activist. However, in the early 1990s, I became increasingly aware of a widespread interest in conflict resolution practices. I took mediation training and became aware of the effectiveness of conflict management tools and the practical help such tools offer to all kinds of people. Working then with others in the Department of Sociology, I developed a graduate program at ISU in conflict resolution. In this, we were especially trying to bring together scholarly work with the more applied concerns of practitioners. We would take very seriously the scientific studies of conflict; however, we would try to relate them to what people find to be practical tools for conflict management.

That, of course, was a very ambitious undertaking. One of the problems we faced was the absence of a good textbook that would bring the interests of academics and practitioners together. I started to write such a book and sent sample chapters out to several publishers.

The Book

This was not my first book on social conflict. One such previous book, *The Science of Conflict* (Oxford University Press, 1982), was very well received by other scholars. However, the present book was to include a more practical orientation. This posed some problems, for work in the field was pretty sharply divided into scholarly and practitioner markets. Nevertheless, I finally found a publisher, and my book came out in 1996 (*Conflict Resolution: Theory, Research, and Practice*, published by the State University of New York Press).

With the book project done, I sought to promote the ideas of our program and my book for a larger audience. I cannot be sure just what combination of altruism, vanity, and simple dedication to the tasks I had started was involved in my motives. I knew there were a lot of people out there who needed more solid grounding in the field of conflict studies than would trickle in through our on-campus graduate offerings. Also, since our program was unique to Indiana, I explored the possibility of using the television delivery platform offered via the Indiana Higher Education Telecommunications System.

The Television Course

Offering a course via television provided some very special challenges for me. I had to get over some of my camera self-consciousness, and adapt some of the techniques, such as PowerPoint, that would provide special aids for distance students. I involved other Indiana State University faculty members in taped interviews, which I felt added a lot to the course. The course included a basic grounding in social conflict theory and research (the more skills development work came primarily through later on-campus workshops), and this was sometimes hard to achieve in a format that mostly extended an on-campus class to the off-campus world. Fortunately, I always had an on-campus group as an anchor. However, we did not reach a sufficient number of students to justify our continuing use of an IHETS channel. Besides, in this kind of pre-

sentation, there were special difficulties, such as being able to hear fully from the students at a distance and the general artificiality of trying to extend the classroom by this new means. I began to explore what might be possible for a Web-based course.

Getting on the Internet

I did not develop a simple Internet course. The Internet is the home base, but the course also includes a series of lesson tapes. Conflict Resolution: Theory and Practice (Sociology 625), the online course in question, is divided into 12 lessons with a videotaped program for each lesson. In the videotapes, I can provide what would be lecture materials in an on-campus class, and I also can add other materials, including a special interview for almost every lesson. I found Ron Payne and Stacy Livingston most helpful for my development of these videotapes. Initially, I tried to build in one on-campus meeting for students to share individual projects. My thought here was to promote face-to-face contact; however, this on-campus requirement had to be relaxed in favor of a videotaped presentation for the more distant students. Beyond that, I try to make optimum use of the Internet. In my planning for this, I found Dr. Sharon Guan more helpful than anyone might imagine. I have gradually built into my CourseInfo site the main ingredients that the Internet can provide. I first offered sociology as an Internet course in the spring of 2000. As I write this one year later, I am offering the course for the second time. The course URL is http://online.indstate.edu/courses/SOC625

Internet course delivery has presented me with both major problems and enormous advantages. It is, of course, a problem not to see your students face-to-face. Although you actually can have more contact with them in discussion forums and e-mail exchanges than you usually would have in a regular class, there is still a major problem with student motivation. Many students are not self-motivated enough to do the work without the discipline of regular class meetings. Some expect this to be an easy class, and soon find it to be more challenging than they wanted. In any event, there is a rather high drop-out rate for the class, and this always signals a problem. In addition, there have been more particular problems with my Internet teaching. These include the difficulty of getting students properly enrolled in the course *and* on the Web site. Many students seem to have special problems, especially when they try to enroll late. Therefore, I have used the first week of the semester as basically a "dead" week for getting on the course—and there are still students who need special help in getting in weeks later. Since I have each lesson planned for a particular week (to encourage steady student progress and to help keep them together for their class discussions), there are obvious problems for late-starters. Another special problem has developed in my attempt to use electronic reserve. Students seemed to have no end of problems (including the necessary patience) in getting documents onto their own systems. This year I have abandoned general electronic reserve in favor of posting, on my Web site, a few selected articles and a larger number of article summaries.

But there are also enormous advantages with the Internet format. Not only is there flexibility for students to do their work when they wish, but the instructor, as well, is free to work when and where (either at home or at school) he wishes. CourseInfo provides ample opportunities for class discussion. I currently use the Discussion Board feature (one Forum for each lesson) for general discussion by the class as a whole. I raise basic issues, and the students take it from there. I also use the Group Pages feature, which allows the creation of discussions for smaller groups. Of course, it is not face-to-face interaction, but the comments are often more carefully considered than they would be "off the cuff," and this might give this framework advantages as well as disadvantages. Another key advantage is the efficiency with which an instructor can use his time posting announcements, creating documents, and responding to e-mail. Such activities are made relatively effortless by the CourseInfo software. Assessment tools are also well developed for student surveys and quizzes, and the statistics provided on these and other course activities are truly amazing. The instructor can tell not only what the student did on a particular quiz, but also how often the student uses all kinds of course opportunities. Quizzes can be timed and limited to a single access. While I have not begun to use all the features provided by CourseInfo (for example, I have not used chat rooms), I generally find the program to be extremely convenient for organizing and delivering this course.

So, this is the story of how a low-tech social scientist came to be a satisfied customer of Internet delivery. I still have my qualms about the computer age. I still think books are more important than computers. And I have some misgivings about the way quantity considerations may take the place of academic quality in planning for distance education offerings. But these are the kind of qualms I have about almost any subject. Basically, I proceed in this new way without regrets.

Division of Lifelong Learning

Faye Bradshaw, M.A.
Instructor of Course Transformation Academy

The New Learning Curve: Creating Online Courses

Introduction

Creating an online course while learning to use a new course management system is a bit like building and flying a plane at the same time. The trick, of course, involves finding a way to accomplish both tasks without crashing.

My first project as an instructional designer was to create a course site for Family and Consumer Science Internship (FCS 353), a requirement for Indiana State University's Interior Design Program. The site was to contain a welcome page, a homepage, and databases for recording employer and student information. The instructor, Dr. Mary Sterling, opted to use WebCT, the course management system currently being adopted by the University and one unfamiliar to me at the time.

As is typically the case, our timeframe for developing, creating, and beta-testing the course was very short. This meant that I had to abandon my old standby CourseInfo and dive into WebCT training in order to complete the project within our given time constraints.

As the instructional designer, I discovered that the tasks and challenges presented in this first project, though initially daunting, were quite doable. The course is still a work in progress. Beta-testing continues for what is actually an experimental site. However, students are actually enrolled in and enjoying the course.

In this article, I would like to share a few of the lessons I learned in working on the internship course and other projects. My goal is to lessen the steep learning curve involved in developing a distance course or enhancing an on-campus course with educational technologies.

The Instructional Design Process in Real Time

As an instructional designer, I am responsible for providing assistance to Indiana State University faculty members who wish to either transform an existing on-campus course to a distance education offering, or enhance an on-campus course with educational technologies. Quite literally, I help faculty with every step of transformation and creation, including: identifying the goals of instruction; developing course materials; designing instructional strategies; and selecting and utilizing instructional media for the delivery of distance education courses. To accomplish these tasks, I draw on my previous work experience as a college instructor and public school teacher as well as my doctoral studies in the Department of Curriculum, Instruction, and Media Technology at Indiana State University.

The generic model of instructional design, derived from a number of theoretical models, involves the steps of analysis, planning, implementation, and evaluation. While this is helpful, I have found that a more practical guide for developing online courses can be found in the *Web Style Guide*, published by the Yale University Press (1999). I have created a practical schema by infusing the design principles of this guide with practical experienced gleaned from my real-world experiences as an instructional designer and teacher. Stages in this schema include: site definition and planning; architecture/site design; site construction; beta-testing; and maintenance.

Site Definition and Planning

The first step in course development is planning. Goals must be prioritized, needs must be targeted, and the types of technical support determined.

At Indiana State University, we find it helpful to provide faculty with a packet that contains: a Course Planning Guide; a Course Development Agreement; Copyright Agreement; and a Course Completion Form. Of these documents, the most vital is the Course Planning Guide, which provides a valuable checklist that forces the faculty member to consider the format (or course modality), learner needs, interaction strategies, library services/resources, media, and methods for evaluating the effectiveness of the course.

Practical Tip: The trick—especially for the first-time faculty member—is to set realistic overall goals for the project. Everyone wants to build an award-winning site; everyone has a creative genius lurking inside; nobody has a clue (initially) regarding the amount of time required to build a Web site.

produce a videotape, or stream audio via a Web page. Remember, the course development process, from start to finish, will take a full year.

Architecture/Site Design

The second step in course development is architecture/site design. Content must be developed, which in turn, shapes architecture/site design of the course.

The following sequence has been found to be essential. First, course content should be identified and gathered; then, the organization of the course site can be established. Also, a timeline for implementing the site design and construction should be created. Arrangements must be made for any additional resources that might be needed. For example, my work as an instructional designer is supported by the work of graduate assistants who are employed by the Faculty Computing Resource Center. These graduate assistants have expertise in such specialties as graphic design, programming (CGI, HTML, JavaScript), and audio/visual streaming.

Practical Tip: Planning is everything. Site maps, thumbnail sketches, and paper prototypes are essential tools for visualizing the overall site architecture. Although this step may seem time-consuming if you are on a tight schedule, working through the site design and architecture on paper *prior* to the actual process of course construction will save many hours of work (and rework) on the course later.

Site Construction

The third step in course development is site construction. This is the step during which the actual organizing, assembling, and initial editing take place.

A course management program has been found to provide easy-to-use templates that accommodate the needs of most faculty members. The University is currently migrating all courses from CourseInfo to WebCT, which offers a greater degree of flexibility in course design and provides a wider range of interactive communication tools. Graduate assistants are available to upload and modify course documents, and to create graphic designs and audiovisual enhancements for the course.

Practical Tips: Rather than construct an entire course *all at once*, create a single module or lesson and conduct an *alpha-test*, or preliminary review, of your design based on this initial module. It is obviously easier to tweak the design of one module rather than an entire set of modules. Adjustments should be made prior to the actual assembling of the entire course.

Beta-testing

The fourth step in course development is beta-testing. At this point, site structure, content, accessibility, and navigational features must be checked to ensure all are in working order.

Faculty members at Indiana State are encouraged to make use of formative surveys and evaluations as a means of gathering information on the functionality of the site. Once the beta-testing is completed, the site is then ready to go public.

Practical Tips: Use a select group of on-campus students to beta-test your online course *prior* to offering the course to distance learners. Preview your course using different Web browsers and different connection speeds.

Maintenance

The last step in course development is maintenance. This ongoing process, frequently termed site management, includes *re-tweaking* and *re-evaluating* the course.

Unfortunately, at Indiana State this step is frequently neglected. We encourage faculty members to periodically review and recheck the following in their online courses: content; navigation; and links to online resources (URLs change; sites simply evaporate).

Practical Tip: Establish a maintenance time-line.

Conclusion

Course development and delivery requires a calm, systematic approach. Hopefully, this article will help the many who are faced with flying and building courses at the same time. No one's plane should crash; every course should have a happy landing.

Division of Lifelong Learning

Sharon Guan, Ph. D.
Manager of Instructional Design
Instructor of Course Transformation Academy

Practicing What We Preach: The Transformation of a Faculty Development Program

Introduction

As you read through this collection of articles, you probably will run into the acronym CTA in every single article. This abbreviation stands for the Course Transformation Academy, the CTA, which was initiated in 1997 at Indiana State University by the Division of Lifelong Learning. Offered to the University community on a semester basis, the CTA aims to prepare faculty members to transform their on-campus courses for distance delivery. Since implementation of the CTA four years ago, technology has evolved drastically as have the instructional methods and techniques for distance teaching courses. As a planner and instructor of the CTA, I felt that, in response to the technical and pedagogical evolutions in distance education, the Course Transformation Academy was constantly confronted with the need for its own transformation.

During my three and one-half years working with distance education, I have been involved in two major CTA curriculum renovations, and I can see that changes keep occurring to bring this faculty development program up to speed with the dynamic world of technology-mediated learning. This article provides an overview of the transformation process of the CTA as well as the continued change and growth that I envision.

CTA: The Original Version

Content

When it was originally conceptualized in the spring of 1997, the Course Transformation Academy was offered to ISU faculty members as a 12-week series of workshops focused on learning about and experiencing four aspects of course transformation: media technologies, student issues, teaching strategies, and course content design. Major topics addressed in each of these areas included:

- *Media Technologies (from a student's perspective):*
  - -Satellite television
  - -Audio conferencing
  - -Internet listservs and chats
  - -WWW home page creation
  - -Videotaping
  - -Graphic design
  - -File transfer
  - -Web surfing
- *Student Issues:*
  - -Targeted student population characteristics
  - -Adult learner needs
  - -Persistence characteristics of distance education
  - -Learning styles
- *Teaching Strategies:*
  - -Grasha's four teaching styles
  - -Identifying teaching styles and preferences
  - -Distance education teaching tips and techniques
- *Course Design*
  - -Instructional design overview
  - -Assessment techniques
  - -Media development resources
  - -Library and computer services considerations
  - -Faculty pioneers

Instructors

CTA instructors consisted of six people from the Center for Teaching and Learning, the Faculty Computing Resource Center, Media Technologies and Resources, and the Office of Distance Education. Each instructor presented a certain topic that reflected issues in one of the four areas listed above.

Delivery

Most of the CTA sessions took place in the classroom environment with a few hands-on training sessions offered in the computer laboratory. Lectures and presentations were the dominant teaching methods.

Problems

In evaluating the CTA sessions, we found that faculty participants were exposed to lots of ideas but that these ideas were not connected in ways that were immediately usable. One of the reasons for this, we found was that no actual structure was in place to help faculty develop online courses. The goal of the CTA sessions was to have each individual faculty member work with a member of the CTA to develop their online courses. However, procedures were not in place to meet this goal.

As more and more faculty moved toward asynchronous modalities—particularly the Internet—for course delivery, it became increasingly important to provide them with models of course design. The request from faculty members was clear and definite, "Show me a good online course!"

This "show-me" request reflected the fact that most teachers teach the way they were taught. Yet with one or two rare exceptions, none of the faculty participants had ever taken a Web-based course, so had few reference points from which to construct their own courses.

While struggling with the new tools for teaching and learning, faculty members were seeking models to guide them through the design, development, and implementation of online courses. To meet such needs and to deal with scheduling conflicts, starting in spring 2000, the CTA curriculum was revised to assimilate a distance course for participants that combined on-site meetings with mediated instruction consisting of video and the Internet. The course, "Course Transformation Academy 101," adapted a new curriculum that consisted of three threads: pedagogy, instructional design, and media technology.

Course Transformation Academy 101

Content

During the spring semester of 2000, the 33 faculty members who signed up for the CTA were exposed to three areas relevant to distance learning: pedagogy, instructional design, and media technology.

In the pedagogy portion of the course, a series of learning models were introduced, including a deductive model, an inductive model, an EDICT model, a Boy Scout model, a Kolb model, an Experiential Learning Cycle, a SHOWeD, and a Deweyan model. The participants were asked to:

- Identify their instructional patterns;
- Consider their teaching goals;
- Review their instructional patterns;
- Create patterned instructional plans;
- Understand students' learning patterns; and
- Match their teaching patterns with students' learning patterns.

The goal of the pedagogy sessions was to promote effective instruction by enhancing the instructors' teaching skills. The teaching related content was presented through lectures, on-site exercises, online reading materials, and group discussions.

The instructional design portion of the course covered the issues of: learner analysis, media selection, assessment, course management, and interactivity. This content was presented via modeling activities such as online surveys, announcements, quizzes, e-mails, discussion boards, and group pages. Instructional design tips for each area were documented at the course Web site.

The technology usage portion of the course was presented by using video demonstrations, instructional manuals, help aids, and hands-on workshops. The goal of this portion of the course was to acquaint faculty participants with CourseInfo, the courseware package adapted by Indiana State University for online course development.

Instructors

Instructors for CTA 101 consisted of an instructional consultant, an instructional designer, an educational expert from the Center for Teaching and Learning, and a distance education librarian. A program coordinator was assigned to assist in the implementation of the program. This person's responsibility included arranging pre-and post-session meetings of the instructors, organizing on-site class meetings, tracking attendance and assignments, and processing payments.

Delivery

The course was offered with a combination of synchronous and asynchronous modes. A two-hour on-site meeting was scheduled every other Friday; online instruction was provided in the alternate weeks. Technology workshops were offered during the asynchronous week for faculty participants with relatively low technical skills.

Problems

In review, the spring 2000 CTA course, offered through distance education, was found by faculty to be a successful model of teaching and learning via distance education. Many faculty members, however, found it to be too focused on the coverage of theory, and not enough on the challenges of connecting the information gathered from the CTA to a practical situation. In other words, the gap between the three parts of the content—pedagogy, instructional design, and media technology—was yet to be bridged.

It was obvious that another revision of CTA curriculum was necessary to meet the needs of faculty members in practicing what they learned during or immediately after the workshop. So the CTA planning team, which consisted of the director of Distance Education, the program coordinator, and myself, met again before the CTA offering of summer 2000 to talk about orienting CTA topics around the following six elements essential to a distance course: instructional goals and objectives, learner analysis, content organization, media selection, interactivity and communication, and assessment and evaluation.

Thematic CTA

Content

Starting in May 2000, the CTA became a project-oriented program focusing on the development of a course, a content module, or a lesson plan. The three major threads,

pedagogy, instructional design and media technology, were organized by topics into the following themes:

• *Instructional goals and objectives*

-Teaching and learning patterns reflected by instructional goals and objectives (pedagogy)

-Instructional tools and methods serving the goals and objectives (instructional design)

-Introduction of technology such as courseware and testing tools that might be used to deliver or enhance instruction (media technology)

• *Learner analysis*

-Introduction of the learning-centered approach (pedagogy)

-Methods used to conduct learner analysis demonstrated through sample online courses (instructional design)

-Developing a learner analysis with online tools (media technology)

• *Content organization*

-Introduction of time-line-based, module-based, and problem-based content structure (pedagogy/instructional design)

-Methods used to present different kinds of content structure on the Web (instructional design)

-Creating content modules and uploading files within a courseware template (media technology)

• *Media selection*

-Introduction of various modalities and media (pedagogy and instructional design)

-Demonstration and hands-on experiences with multiple modalities and media (media technology)

• *Interactivity and communication*

-Importance of interactivity in teaching and learning (pedagogy)

-Methods used to promote interactions and communication (instructional design)

-Developing interactivity using discussion board, e-mail, chat room, group pages, and other teleconferencing tools (media technology)

• *Assessment and evaluation*

-Different aspects of assessment and evaluation (pedagogy)

-Methods used to conduct assessment and formative/summative evaluation in the online environment (instructional design)

-Creating online self-tests, quizzes, and surveys (media technology)

Instructors

The team of CTA instructors was expanded to include faculty members experienced in teaching with instructional technology, information technology experts, and even distance students. The formative surveys indicated that the showcases conducted by their faculty peers were well-received by CTA participants. A discussion panel led by students who had taken more than one distance course also drew great attention from the participants. The traditional CTA instructors, including the pedagogy expert, instructional designers, the program coordinator, and distance librarian, served more like facilitators than lecturers.

Delivery

CTA sessions were split into two parts: classroom sessions and hands-on practices in the laboratory. While most of the pedagogy and instructional design show-and-tells took place in the classroom, formative evaluations regarding each theme were conducted online.

CTA: The Ongoing Transformation

With the continuing flow of information technology into the ivory tower of academia, changes became possible and inevitable. The World Wide Web not only opened the gate to make information available to everybody, but also offered a new way of learning without the boundaries of time and place. Nelson Jackson said, "I do not believe you can do today's job with yesterday's methods and be in business tomorrow." As a faculty development program targeting the integration of technology, the Course Transformation Academy holds the responsibility of introducing today's methods and keeping our institution in business tomorrow.

"If one desires a change, one must be that change before that change can take place," Gita Bellin, an acknowledged expert in the field of Western behavioral science and Eastern philosophy, once stated. In this case, the CTA was born to be a change agent that requests constant update, rejuvenation, and, most of all, adjustment to meet our faculty's needs. Although it is hard to predict the exact layout of future CTAs, I envision, that to remain effective, the CTA will have to be flexible, scalable, and up-to-date. Its flexibility will be reflected by two aspects: multiple delivery methods from which faculty can choose their preferred mode of distance teaching, and on-demand support to individual faculty members. It will also need to be scalable so that it can offer support to the neophytes and the experts, and those in-between.

To date, 202 faculty members have graduated from the CTA, among which one-third have attended two or three times. The fact that faculty members keep coming back demonstrates that the CTA is not and should never be, a static program. So it should be true of any course, either on-campus or at a distance. Technology may not be the cure for all the problems associated with teaching and learning, but it surely is a catalyst that ignites an examination of yesterday's method, today's job, and tomorrow's business.

Reference

Grasha, Anthony. (1996). *Teaching with Style*. Pittsburgh, PA: Alliance Publishers.

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Adding Realism Via the Virtual: My Experience Using the Internet to Authenticate French Courses

Once upon a time in a small college just across the Wabash River, there worked a young *professeur* of French. Now this *professeur* was a good teacher—she worked very hard to teach her students how to speak some French and, at the same, to bring them a wonderful experience of French culture.

While it was very easy to create grammar lessons and language laboratory lessons, the *professeur* felt that bringing truly authentic materials and authentic experiences to her students was lacking. Of course, she could buy videotapes that showed the picturesque countryside of the Luberon or the Renaissance chateaux of the Loire Valley or the glorious monuments and museums of Paris. She could show pictures from books, and copy articles from magazines and newspapers.

Alas, all of these things were costly (and the college did not have much money to spend on such "unacademic" items). Besides, how much could students really learn about the French and how they live, work, play, and think; how much real-world experience could the students get from such static materials?

What the *professeur* decided her students needed was something much more exciting than sitting in a darkened classroom, watching flicking images of the Eiffel Tower and the Seine. Day after day, she sat in her office, wracking her brain.

Then one day a wise friend happened by and said, "I must show you something; this is really *magnifique*!" So, off the pair went to the library, where in a small conference room sat a computer. Now what was so interesting and *magnifique* about this computer? Well, as the *professeur* soon discovered, the computer was connected to something marvelous called the Internet!

"Look!" said the friend, typing a strange combination of letters on the keyboard, "I can go to Paris!"

"Surely not," replied the *professeur*. "We don't have plane tickets or hotel reservations."

"Just wait and you shall see," nodded the friend knowingly.

Lo and behold, after nearly 20 minutes (during which time the *professeur* and her friend went to the reading room and read a few magazines), what did appear before her wondering eyes, but a brightly colored, interactive map of the monuments and museums of Paris.

"*Oh la la! Une visite à Paris!*" exclaimed the delighted *professeur*. "What wonders await my students with this *invention merveilleuse*!"

Now, the *professeur* spent hours and hours before the small glowing altar, happily discovering the Louvre and its history, Cannes and its films stars, Lascaux and its cave paintings, the Métro and the SNCF, real estate agencies, hotels, and restaurants.

Like the *professeur* here, my first encounter with the Internet, while not exactly as described above, did in fact have a great impact upon my teaching and my career. Since that time, I have used the Internet both as a teacher and, most recently, as an instructional designer. I would like to share some of the lessons I have learned from a faculty perspective.

From a Faculty Perspective

As a teacher of French at a small Midwestern college for women, I used the Internet to support and extend my campus-based courses. I discovered that the Internet offered access to a vast amount of information (cultural, lexical, and grammatical) to me and my students—information that previously would have necessitated study abroad or extensive funding for the library.

For lower-level French classes, students organized *virtual visits* to France and other French-speaking regions of the world; from public opinion polls they learned what French people thought about the movie *Titanic* and AIDS; they learned the birth, marriage, divorce, and death rates from the French Statistical Agency; they learned what kind of houses French people live in; and they learned about the cost of living, homelessness, student demonstrations, and presidential elections. With live Webcams, they saw Paris at night, a boulangerie, and French people at home.

Effective Web-based cultural lessons integrate thematically with the textbook and class lessons. For example, when the first-year students were studying housing and how people

live in France, the textbook required them to learn vocabulary about houses and rooms and furniture. Of course the text presented photos of French homes and offered exercises to help them learn the vocabulary and to describe houses. Yet, these activities did not seem to appeal to the students; the activities seemed far-removed from "real life."

To bring more authenticity to the lessons, I created an Internet activity in which the students adopted the role of house-hunters in France. They had to develop a list of basic requirements and amenities they desired in a home. I gave them a price range (in dollars) and a list of real estate agencies in various regions of France. The students explored the available properties, recording pertinent information on a chart and eventually narrowing their choices and selecting one property. One student even found an affordable castle—complete with dungeon.

This lesson was successful because the students became active participants in the learning. They were involved, even invested, in the activity and were actively constructing knowledge. They applied what they had learned through vocabulary and grammar exercises in the classroom and the laboratory to an authentic context, one which interested them and felt to them more realistic than mere book learning.

In upper-level courses such as French Civilization, I used the Internet to organize course materials as well as to serve as the major source for course texts. Although a required course for French majors and minors, this course was taught in English and enrolled students from several disciplines ranging from art to biology. Since it was difficult to find texts that adequately reflect the variety of backgrounds and levels of competency in French of the students, I used authentic documents in public domain that were easily accessed on the Web. The Internet was more practical and less costly than the alternatives: library reserve or photocopying. While many of the documents I used for the class were to be found in books in the college's library or at nearby libraries, the physicality of the place restricted student access to the materials. Students were limited in the time allowed for checkout of material, as well as by the number of items and the open hours of the library. Collecting a set of 20 or more books that might contain only one pertinent text also seemed too cumbersome. While creating a photocopied collection of the texts might solve the problem of too many books, it ran the risk of copyright infringement, unless I sought permissions from each author or publisher, and as some of the books were from publishers long out of business (or in France), it would have been almost impossible to secure permission to use the texts. An additional burden would have been the cost of the photocopying.

After considering these issues, and knowing that several Web sites offer excellent collections of translations of original documents culled from numerous public domain texts, I determined that using the Web for course materials would benefit the students most. How better to understand why the Europeans undertook the Crusades than to read the rallying cry from the Pope? How better to understand the French Revolution than to read the Declaration of the Rights of Man (which echoes the American Declaration of Independence)?

Reading the *actual* text (albeit in translation) rather than reading *about* the text proved to be a pedagogical boon. Since the assigned text was always located in a collection with related documents, students often extended their reading and used these documents in their assignments and papers. Students appreciated the opportunity to have course materials available to them at any time and for repeated perusal. But above all, they demonstrated excitement at being able to "hear" the words of the persons who experienced the historical events. Authentic texts created a sense of immediacy, of being there, of participating.

Lessons Learned

The Internet is indeed *magnifique* but it is not enough to simply tell students there is good information available to them on the Web. So much is accessible that a search for materials can become overwhelming and frustrating to them. Here are a few tips on how to simplify the Internet for student use:

- Integrate Web-based materials into the course curriculum; such information is beneficial only if it supports and extends.
- Involve students in the learning process; they can create meaning.
- Provide students with structured or guided activities when using the Internet.
- Design context-specific, meaningful activities.
- Teach students how to determine what is good and useful information (and acceptable to the instructor).
- Use authentic documents.

Resources

Internet History Sourcebooks Projects: a comprehensive collection of public domain and copy-permitted historical texts that is organized into three major sourcebooks (Ancient History Sourcebook, Medieval Sourcebook, and Modern History Sourcebook) and offers nine sub sourcebooks, including African, East Asian, Indian, Jewish, and Islamic, as well as Women's sourcebooks.
URL: http://www.fordham.edu/halsall/

Voice of the Shuttle: Web Page for Humanities Research: an excellent resource of authentic documents and reference materials for a variety of disciplines including anthropology, art, cyberculture, cultural studies, minority studies, photography, and science, technology, and culture
URL: http://vos.ucsb.edu/

EuroDocs: Primary Historical Documents from Western Europe: a collection of historical documents treating mainly Western Europe in transcription, facsimile, or translation; organized regionally
URL: http://library.byu.edu/~rdh/eurodocs/

ARTFL American and French Research on the Treasury of the French Language: a database of almost 2,000 texts, including classic French literature as well as non-fiction prose and technical writing. Most texts date from the 18th, 19th and 20th centuries; some 17th century and Medieval and Re-

naissance texts are included. Of special interest is the ARTFL project on the 18th century *Encyclopédie*.
URL: http://humanities.uchicago.edu/ARTFL/

Electronic Texts and Publishing Resources from the Library of Congress: a set of links to the major collections of electronic texts worldwide including the Gutenburg Project, and Project Perseus, as well links to government resources and electronic publishers.
URL: http://lcweb.loc.gov/global/etext/etext.html

How to Critically Analyze Information Sources: a Cornell Library reference that is good for any source, not just Internet
URL: http://www.library.cornell.edu/okuref/research/skill26.htm

Thinking Critically about World Wide Web Resources: an excellent reference piece by Esther Grassian, UCLA College Library
URL: http://www.library.ucla.edu/libraries/college/help/critical/index.htm

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- Dynamics of Professional Success
- Accounting Systems

Enhancing Learning: Web Course Delivery and MERLOT

Educators know from past research that learners tend to remember ten percent of what is read, 20 percent of what is heard, 30 percent of what is seen, 50 percent of what is heard and seen, 70 percent of what is said, and 90 percent of what is both said and done. We also know from decades of past research that everyone has a predominant learning style. Furthermore, an important link exists between teaching strategies used and preferred learning styles.

We may experience more successful teaching and learning experiences if we enhance our students' abilities to learn by expanding our ability to teach flexibly. As teachers, we can, for example, use PowerPoint presentations, conduct laboratory experiments, assign case studies, show movies, give demonstrations, and simulate experiences to augment the quality of the learning experience. The Internet provides yet another means for enhancing learning experiences, whether it be the delivery mechanism for an entire course or used as a resource for on-line multimedia educational materials.

As a result of being awarded an Indiana Partnership for Statewide Education grant from the Indiana Higher Education Telecommunications System (IHETS), I transformed my Not-for-Profit Accounting course (Accounting 410) to distance delivery using CourseInfo, an authoring tool. During fall of 2000, the Web site materials were beta-tested with my traditional on-campus class, and during spring 2001, the course was offered for the first time in distance format. The process has been both challenging and rewarding.

Reflecting on my experiences, I would like to share some thoughts about developing and delivering an online course. Accordingly, the following questions will be addressed:

- What are some advantages of distance education not found in the traditional classroom?
- As a teacher, who is suited for the online environment?
- What qualities should a student have to be successful as an online learner?
- How much time does it take to transform a traditional course?
- What are some basic instructional design considerations?
- Where can online teaching materials be found to enhance instruction?

What are Some Advantages of Distance Education not Found in the Traditional Classroom?

The online learning environment:

- Is unbound by time or location. As a result, nontraditional students find the online environment a convenient way to fit education into their world of work and family.
- Has the potential to facilitate individualized instruction. Students can be given the opportunity to learn at an individual pace.
- Offers a way for gifted traditional students to accelerate completion of their programs when course conflicts exist.
- Engages more students in class participation when everyone is required to respond in a discussion forum or chat session. In a regular classroom, it is not feasible to have everyone contribute to every discussion question.
- Provides students with time to reflect on information before responding, an aspect introverted students find important in order to comfortably contribute.
- Eliminates visual barriers that hinder some students from expressing themselves. In the online environment, they can feel anonymous.
- Allows for the use of more formative and summative assessment measures with feedback immediately provided. Online instruction is not bound by 50- or 75-minute time constraints.

As a Teacher, Who is Suited for the Online Environment?

To begin with, an online teacher must believe that the online environment can be a valuable learning experience. However, the traditional classroom cannot be mirrored using

an online paradigm implemented with CourseInfo or WebCT. Second, the instructor for the course should be properly credentialed as should be the individual who develops the course. Online teachers should have had some prior training in the use of Web technologies and course design. The Division of Lifelong Learning's Course Transformation Academy is an excellent starting point. Continued technical support should also be available.

Next, I believe an individual must have a personality that is open-minded, flexible, sincere, concerned, and tolerant. Technology glitches are inevitable. For example, students could be disconnected from their Internet service provider while completing an online test. The site server may decide to crash when an online chat session is scheduled. Some students will experience difficulties accessing as well as downloading or uploading materials. In the online environment Murphy's Law rules.

Also, online teachers must enjoy communicating in writing. Discussion boards and e-mail messaging are the primary communication mediums employed. Course documents and assignments are transmitted via the written page. Feedback is provided in writing rather than orally and when personalized can make students feel part of a community. After all, the online teacher is a role model when it comes to demonstrating the writing skills students are expected to use.

Finally, the distance teacher must be able to be online nearly every day in order to provide timely and quality feedback to students. The environment demands organization and attention to detail.

What Qualities Should a Student have to be Successful as an Online Learner?

Attitude, skills, and commitment determine whether a student is a good candidate for online learning. First of all, successful online students must believe quality learning can take place without going to a traditional classroom. Most importantly, successful online students also must have good written communication skills and enjoy corresponding through writing. Questions have to be asked as written e-mail messages. Students must be willing to "speak up" when problems arise and have the ability to express questions in a clear and specific manner. Someone who is writing apprehensive is not suited to the online environment. In addition, successful online students must be self-motivated and self-disciplined. They must enjoy reading and be able to meet deadlines. In many cases they will be working independently. Finally, students who believe an online course will be easier than an on-campus course are usually mistaken. Courses may require a time commitment of four to 15 hours per week per course.

How Much Time Does it Take to Transform a Traditional Course?

Obviously, the answer to this question will vary. According to Judith V. Boettcher (1998), Web development hours range from five-23 hours, with the average projected as being 18 hours. While developing Accounting 410, I kept a log of the hours spent creating and transforming materials. On average, 15 hours of work were required to convert one hour of traditional classroom instruction. With the exception of uploading quizzes, tests, and viewable PowerPoint slides into CourseInfo, all course materials were personally developed.

To keep my development time in perspective, some additional information about accounting as a discipline is perhaps relevant. First of all, the only publisher-provided supplements available for the Accounting 410 text are a solutions manual and test bank. In addition, during summer of 1999, the Governmental Accounting Standards Board (GASB) adopted Statement No. 34, Basic Financial Statements—and Management's Discussion and Analysis—for State and Local Governments, and it is being phased in over a three-year period beginning June 15, 2001. As a result of GASB Statement No. 34, sweeping changes had to be made to the content of my course and those materials were not available until July 2000.

Navigating the Accounting 410 CourseInfo site, as well as uploading files from a distance of only 50 miles, proved slow and cumbersome with a Pentium I and 28.8 kbps modem. Once personal computer equipment and Internet service provider access were upgraded, productivity improved. Therefore, development time for instructors not faced by similar obstacles would very likely be somewhat less.

What are Some Basic Instructional Design Considerations?

Based on my experience transforming Accounting 410, as well as investigating sites already developed, the following suggestions are offered concerning basic instructional design considerations:

- Create a site acclimation activity to familiarize students with the use of the course management system. As a result, access problems will be detected early.
- Have materials available in both downloadable and viewable formats. While the majority of traditional classroom students prefer the downloadable format, distance environment students report they prefer access to both formats.
- Take advantage of being able to provide non-graded assessments so that students can monitor their own learning. For Accounting 410, students reported appreciation for having access to solutions to non-graded homework assignments so they could check their work.
- Realize that merely saving text from Word files is not an effective way to create Web pages. Text should be formatted for screen viewing, which is not the same as the way pages are formatted in a book. The two mediums are distinctively different.
- Consciously use white space to guide the reader and define important areas of Web pages.
- Break-up long passages with small graphics, horizontal lines, bolded topic headings, and tables to relieve eye fatigue.
- Avoid colors and combinations that cause eye fatigue. No patterns or busy backgrounds should be used.
- Choose fonts, such as Times Roman or Arial that most users will be able to view.
- Create Web pages with a left fixed margin table to solve horizontal scrolling problems that occur when a standard html document is viewed in CourseInfo's Course Documents frame.

- Use software one version below the current version so all students can download materials.
- Limit the length of Web pages to minimize download time and scrolling.
- Keep layers of Web pages to a minimum to facilitate navigation.
- Use forward and reverse document links to help students navigate quickly through text.
- Consider creating a list of frequently asked questions to minimize repeating answers to different students.
- Log on from a distance and as a student to learn firsthand what students will experience.
- Take advantage of as much instructional support as possible.

Finally, realize that as an enhancement to a traditional on-campus course, not all students will appreciate being required to use a CourseInfo site. Considerable literature exists regarding computer anxiety. Some individuals still shun technology and will resent being required to download all homework assignments. For example, approximately 15 percent of the students in the fall 2000 on-campus Accounting 410 class would not use components of the site even when bonus points were awarded for participation in the beta test.

Where Can I Find Online Teaching Materials without having to Develop Them Myself?

The answer to this question is MERLOT (Multimedia Educational Resources for Learning and Online Teaching). For individuals who would like to enhance their traditional courses with online teaching materials, MERLOT (www.merlot.org) is an excellent resource. MERLOT is a collection of over 3,000 teaching resources that can be used as components of a course. The site includes links to simulations, tutorials, drills and practices, collections, animations, assignments, references, and presentations.

The following 12 disciplines currently are represented in MERLOT: biology, business, chemistry, foreign language, health sciences, history, information technology, mathematics, music, physics, psychology, and teacher education. In addition, user comments and peer reviews posted on MERLOT help faculty evaluate the quality and appropriateness of materials for their courses. Some modules have assignments attached that provide examples of how the materials might be used to meet specific learning objectives.

Anyone can become a member of MERLOT by registering at the site. Advantages of membership include being able to contribute materials, add assignments to existing contributions, and provide user comments about the quality of modules. Membership profiles also facilitate contact with colleagues who have similar interests. In addition, a record of contributions is also stored in each member's profile.

The mission of MERLOT is to improve the effectiveness of teaching and learning by expanding the quantity and quality of peer-reviewed learning materials that can be easily incorporated into existing courses. As a result, 12 peer review discipline teams have been created to assess materials that have been posted. With the permission of the author, an expert peer review is added to the MERLOT database. At the same time, a congratulatory letter is sent to the author's dean and chairperson.

Peer reviewers use three general categories of evaluation standards: quality of content, ease of use, and potential effectiveness as a teaching-learning tool. Quality of content involves relevance, accuracy, clarity, conciseness, completeness, and flexibility. Whether the module requires context to be used (assignments), includes an adequate amount of material, and summarizes concepts effectively are additional elements of quality that are assessed. Usability addresses such features as clarity of instructions and ease of navigation as well as visual appeal, interactivity, and design excellence. Potential effectiveness considers the extent to which the module identifies learning objectives and prerequisite knowledge, reinforces concepts progressively, and demonstrates relationships between core concepts. These MERLOT evaluation criteria can also serve as development guidelines for faculty to consider when creating online modules or transforming courses.

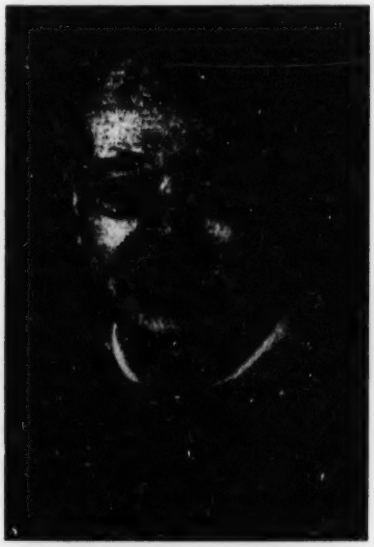
Conclusion

Computer-based learning as an instructional paradigm has been around for approximately 40 years. One of the earliest applications involved the debut of PLATO (Programmed Logic for Automated Teaching Operation) in the 1960s. During the 1970s, computer-assisted instruction (CAI) spread to academia and computer-based training (CBT) was introduced to the workplace. The focus on school and home markets for CAI continued in the 1980s, as technology was refined and more applications were developed. Then, in the early 1990s, the Internet network was unveiled, and the technical, economic, and operational feasibility of distance education became plausible. Online learning can be viewed as another technique to be added to the repertoire of instructional strategies available to educators. Just as students who possess specific learning styles have preferences for specific teaching methods, so too is the virtual classroom suited for a particular niche of students and instructors.

Reference

Judith V. Boettcher. *How much does it cost to develop a distance learning course?* Syllabus. May, 1998.

School of Education



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Never Follow a Banjo Act with Another Banjo Act

My father, who booked vaudeville acts in our little town, always told me, "Never follow a banjo act with another banjo act." Unless changes occur, distance education performed through instructional television is going to produce results that are similar to those it is now obtaining. Those who always do what they have always done will always get what they always got.

One year ago, I wrote about the experiences of a neophyte in distance education who taught courses through television. I highlighted the trauma and a few embarrassments of my first distance education experiences. Today, my opinion is somewhat more optimistic, but writing about it will be in the iconoclastic genre. I have made a career of writing iconoclasts, so this will be another banjo act.

I recently told one of my old friends, with hyperbole, that I would kill to be able to accomplish what I thought I might with distance education. The inevitable conclusion to be drawn is that I cannot. And the reasons are an interaction of: technology, organization, and pedagogy.

Technology

To teach remote sites through remote television, an instructor must be prepared for all eventualities. During my first broadcast of one course last year, my director interrupted my class to tell me that I would not be able to use my PowerPoint presentation because transmission of computer images would not be possible. To this I replied, with my customary arrogance, "That's no problem, I am a pro" and proceeded to use my backup of the presentation which I had prepared as paper slide displays. But that did not end it. A few minutes later, I was informed that we were no longer transmitting to any remote sites, which meant that we must then prepare videotapes of the class to be mailed to all class members whose transmission had been terminated.

Transmissions were interrupted so frequently that, toward the end of the semester, only three of the 20 distance education students were watching televised broadcasts. The rest simply ordered videotapes.

My previous televised classes had involved audio/video transmission to students, but only audio transmissions from them. The ostensible reason for this is to allow questions and class participation. I am sure there are some classes that could thrive on this format. Because I knew that student-instructor interaction was a desired outcome, I tried to set up my classes to allow for that. But I was shocked to find that many of my students resented being required to participate, and some of them openly told me that they did not wish to be put "on the spot" by the instructor. If that is the case, they may as well have ordered videotapes. For these students, apparently the "face in the box" is all that they ever wanted even though we are told that the "face in the box" will not work.

The one-way video transmission was available to most communities in Indiana through their public schools as well as other institutions. However, during the previous year, a decision was made in some air-conditioned office to twice cut in half the number of channels dedicated to video-audio transmission. Instead, two-way television transmission was the medium that replaced its television-audio predecessor. However, the person who made this decision was apparently oblivious to the fact that very few schools had the infrastructure that would permit two-way television. We had many students who wished to complete course requirements for their degree through distance education. However, at this time, most of these students were unable to receive transmission. Again, sending videotapes was a possible solution. There were really no other choices.

During the previous summer, I had collected a group of videotapes of my classes, and I mailed them to my students at those times when they could not obtain transmission. However, I was informed that this was not what distance education was supposed to be, and I was told to desist with tape distribution. But the irony of the situation is that the University was now compelled to send students tapes in the manner that I was informed was inappropriate for distance education.

Students report to me that videotapes of the classes are sometimes not mailed to them until ten days after the class broadcast. There have been instances of students receiving

wrong tapes and on at least one occasion, students reported that the tapes they received were blank.

Organization

One of the main problems with distance education is ascertaining just who is enrolled in the class. During the first few weeks of class, registrations roll in, and we carefully identify students who have added, dropped, or transfer. But this is only the beginning. Then, information concerning student addresses, employment locations, phone numbers, Internet addresses, and special problems of the students must be collected. By then, two weeks have passed, and the instructor must put together the syllabus for the course, the textbook, PowerPoint notes, and other materials, which are then sent to students as the instructor ferrets out data about them. The class is now in its fifth week, and this process is just now coming together.

Another problem is coordinating the remote sites. Some site coordinators informed students that the staff at the site would be having Spring Break at a different time than the University; therefore, the sites would be closed during that time. In other instances, on at least three occasions, students went to the site where they were to view classes only to find that the person who supervises the site was nowhere to be seen.

Testing

In 1975, I published an article on the potential of computer-assisted testing, and how the computer was more naturally suited for testing than for teaching. The computer administers and scores the tests, gives students feedback concerning the correct answers, and records the answers in each student's grade book. For this course, we elected to use computer-assisted testing through the Internet.

Now, there were immediately a few problems. Some students had Internet service providers that habitually dropped them after about 20 minutes. This was not a long enough period for completion of the test, and the computer program abolished any answers the student had recorded.

For some strange reason, there were an inordinate number of student interruptions of their tests. Since correct answer feedback occurs at the end of the test, it is reasonable to suspect that students are somehow trying to short circuit the process and find out correct answers before they are transmitted. Such strategies are doomed to failure. The reasons that students give for transmission termination are incredible. One student said that transmission ceased when someone rang his doorbell. Another student declared that they stopped the test when the phone rang. (Never mind that they were using the phone modem, and the phone would not have interfered.)

Perhaps the most suspicious of all was a student who was taking the test at the same time as her friend. The student had failed the first two tests miserably, but this time scored 100 percent correct. However, the test key was incorrect, and three items had the wrong correct answer keyed into them. So, while the student answered all questions correctly according to the answer key, there is little probability that she could have answered all questions correctly according to an incorrect key. This student is repeating the course at this time.

Pedagogy

Another challenge is the division among the University and faculty concerning distance education. Some have neither the desire nor the talent to be involved in it; some openly say that they want no part of it. Others believe distance education to be the way of the future and try their best to make it all that it can be. Others are aware of possible criticisms of the distance education process, and try to make the process turgid and rigorous. This division among faculty produces deadlocks and delays that can result in undesirable situations for students enrolled in distance programs.

In 1965, I was a researcher in a brand-new field called computer-assisted instruction. We had high hopes but these were tongue-in-cheek because we knew that it cost 40 dollars to teach each student for each hour and, during that hour, the computer would be inoperable for 45 minutes. But computer-based education is now alive and mostly well.

Distance education is now at the place that computer-assisted instruction was 36 years ago. There are many problems, and its effectiveness is suspect. However, in spite of the problems I have experienced, my distance education students received better test scores and grades and had a higher percentage of completion than my on-campus students.

Today, I am teaching two classes in three media (studio, two-way television, and videotape) simultaneously. In many cases, the number of students who can attend classes at a two-way television site and the number of students at each site is very small. Although I have concerns about the problems I have elucidated above, I plan to continue because I am not yet ready to try to accomplish the course through the Internet. The Internet courses that I have seen are either the presentation of the textbook or the listing of student activities on line. I want my classes to have more person-to-person interaction than either of these allow.

Conclusion

Last night, students in my classes interrupted the classes to announce that they could not hear me. Then, they said that they were going home and would order tapes. During the class, we were often disturbed by the sound of what appeared to be a phone ringing and other sounds that could be best described as loud chimes. This morning, there are several communications from students who want me to deal with problems concerning the Internet, videotapes, text materials, or televised transmission. Attempts to resolve these problems amount to a constant struggle.

Perhaps, the most difficult aspect of distance education is endeavoring to change it. There is a complex network of personnel in the Distance Education Program at our University, and knowing where to go for particular kinds of individualized help is something I have not mastered. Last year, I was appointed to a faculty distance education committee for the University. I was told that the committee would be subsumed into a larger task force representing administrators, support staff, and faculty. I also was told that, since I had been very active in the original committee, I would be a member of the

task force. However, when the members of the task force were announced, I was not included—possibly because of my original distance education iconoclast.

I look forward to the time when there will be the technology, organization, and pedagogy to accomplish what I want to do in my courses. If that happens, many people will have to stop following their banjo acts with another banjo act—and maybe then, I will be able to write something about distance education besides yet another iconoclast.

School of Education

Georgia Hambrecht, Ph.D.
Professor of Communication Disorders

Course

- Topics in Communication Disorders: Supervision of Speech-Language Therapy Service Providers

From Classroom to Computer: An Experience in Internet Teaching

Quote from instructor's home page: *"This is also my first time doing a Web-based class, and I ask you to adopt with me the attitude—Problems Are Our Friends."*

Response from student's homepage: *"I will say, if problems are our friends, this is the friendliest class I have ever taken."*

What follows is the story of my experiences teaching a distance education course, Supervision of Speech-Language Therapy Service Providers (http://online.indstate.edu/courses/CD595), in an asynchronous, computer-based delivery format. I was very fortunate to have the assistance of a technology savvy secretary and graduate student throughout the process. The steps taken to transform an on-campus course to a distance education course are chronicled. Three steps of planning, advertising, and delivering will be described.

How I Got into Distance Education

J.M. Schnorr in "Developing and using technology for course delivery," summarizes issues related to technology and distance education classes in the area of special education. She noted that universities are eager to develop and promote distance education offerings. This was true in my experience. In 1998, the Course Transformation Academy (CTA) offered at Indiana State University provided: a network of individuals who could be contacted for support; a user-friendly, uniformed delivery of content (CourseInfo); an opportunity to try out both the student and teacher roles of distance education; and a stipend for developing a distance education course. I thus began my forage into distance education with moderate motivation, minimal computer skills, and the blessing of the University.

Step I: Planning

I knew I would be teaching a distance education course one semester prior to the actual offering of the course. The single most helpful aspect of this one-semester lead time was that I was teaching an on-campus course on a closely related topic. So, I paid closer attention to what I taught (content) and the way I taught it (pedagogy). I also began collecting related sites and setting up external links within the online course to take advantage of the material available on the Web. I began to fill the site with information, such as the syllabus, external links, and the instructor's homepage. The course was progressing appropriately. However, the week classes were to start, the University updated the version of the template in which the course was developed (CourseInfo) from 2.0 to 3.0. Unfortunately both systems remained online at the time of registration. Confusion reigned for a time but ultimately students were enrolled.

Step II: Advertising

Advertising was a new experience for me. I have taught at the University for almost 20 years. However, except for producing some fliers for summer offerings, I had never promoted a course. It was evident from the beginning that, if I wanted students, I had to make potential consumers aware of the offering. The University did not appear to be doing specialized marketing of distance education classes. I wrote articles for two State-based newsletters and sent an e-mail announcement to each speech language pathologist with an e-mail address in the State organization's directory.

Step III: Delivery

The following chart compares components of my on-campus and online teaching:

Component	On-Campus	Online
Introductions	Go around room	Create student homepages Interest/level survey
Presentations	Xerox copies; PowerPoint	PowerPoint dropped in group pages
Discussion	Groups	Discussion board postings
Verbalize information	Talk to partner	Talk to self/others
Teacher input	Oral lecture/chat	Written lecture/chat

Component	On-Campus	Online
Assignments	Hand in	Submit in digital drop-box
Information sharing	Handouts	External links
Information gathering	Library search	Internet search
Assessment	Written exams	Take home exams online
Grade posting	None	Online grade book

What I Got Out of Teaching Distance Education

The experience of teaching in a new medium was enlightening. This was the most reflective teaching experience I have had in years. I found myself examining the process of teaching, and struggling to take what I felt were the essential techniques that I use in on-campus teaching (for example, active learning activities involving reading, writing, talking-listening, and reflecting) and then transforming them into computer-based constraints. I also identified benefits of Web-based instruction (specifically, the vast amount of readily available information and opinions), and I found myself working to include them in my on-campus courses.

References

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Acknowledgments

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School of Health and Human Performance

Thomas Sawyer, Ed.D.

Professor of Physical Education and Recreation and Sport Management

Courses

- The Nature of Play, Games, Leisure, and Recreation
- Marketing Applications in Recreation and Sport
- Governance and the Standards of American Sport
- Legal Aspects of Recreation and Sport Management
- Risk Management in Physical Activity, Recreation, and Sport
- Sport Management Seminar
- Foundations of Conditioning
- Scientific Aspects of Physical Education and Coaching
- Research in Recreation and Sport Management
- Recreation and Sport Facility Development and Management
- Human Relations and Communication in Recreation and Sport Management
- Financial Management and Development in Recreation and Sport
- Law of Recreation and Sport
- Marketing for Recreation and Sport
- Aquatic Facility Development and Management
- Management of Recreational Sports in Higher Education
- Recreation and Sport Management Seminar
- Health, Fitness, and Sport Club Management

Distance Education Changing and Expanding: Reborn to Increase Access to Higher Education Opportunities

"The secret of getting ahead is getting started. The secret of getting started is breaking your complex overwhelming tasks into small manageable tasks, and then starting on the first one."

—Mark Twain

Introduction

For the past five years, I have been involved in developing program articulations between two-year postsecondary institutions and Indiana State University. I have visited over 30 two-year campuses and spoken with many students, faculty, and administrators. The excitement about distance education is beyond words. It provides the students with accessibility to baccalaureate and master's degrees before unreachable and unaffordable. Further, it provides the students a great deal of flexibility in a very hectic and fast-moving environment.

On a regular basis, this is what I tell students, faculty, and administrators about distance education and the benefits it can provide to those who are ready to accept the responsibilities of becoming a distance education student. The role of the distance education student is much different then the role of a classroom student on campus. The following is a profile of a successful distance education student:

- Accomplished learner
- Dedicated
- Determined
- Disciplined
- Independent
- Mature
- Motivated
- Organized
- Passionate about learning
- Persistent
- Responsible
- Self-activated
- Self-directed
- Self-paced

As can be seen by this profile, distance education is *not* for everyone. However, distance education is an alternative to traditional education methods that will grow rapidly over the next decade into a large component of what a typical institution of higher education does to make education accessible to the masses.

Traditional higher education on campuses will not disappear but merely change to meet the demands of the new students (for example, increased technology use by faculty and students, increased technology availability to faculty and students, shift from seat time to self-directed learning activities) who arrive on campuses in the future. A traditional on-campus experience for traditional students will always be a need, as will distance education for non-traditional students. These needs can and will co-exist in the future. Some on-campus students will avail themselves of distance education while continuing to enroll in traditional classes and to participate in various campus social and educational opportunities such as sororities or fraternities, recreational sports programs, residence hall or off-campus housing, and athletic events—opportunities not available in their hometowns. These students will, however, need flexibility to work as well as play, and

distance education will be the mechanism to provide this flexibility.

The major issue is not with students but how to properly compensate faculty for their efforts in providing traditional instruction as well as distance education. The compensation issue, as well as the many issues that surround intellectual property rights, will cause the greatest frustrations on campus. As these practical issues become resolved, the speed of course development for distance education will be greatly enhanced. The future success of the distance education efforts on any campus will be determined by the policies developed to encourage distance education development and the technology available for the preparation and delivery of distance education courses and programs.

A Distance Education Primer

For over 100 years, distance education has served as an alternative method for delivering academic course work to students unable to attend traditional campus-based classes. The format of distance education varies from correspondence-style (paper and pencil) courses to technology-based courses using the Internet. Distance education offers students considerable benefits, including increased access to lifelong learning opportunities. Distance education may be essential for learners who are truly place-bound because of factors such as employment, childcare demands, disability, or remoteness of the location where they live. This manuscript presents information on the many forms distance education can take and the keys to successful teaching with distance education.

What is Distance (Distributed) Education?

Distance education is a method of education in which the learner is physically separated from the teacher and the institution sponsoring the instruction. It may be used on its own or in conjunction with other forms of education, including face-to-face instruction. In any distance education process, there must be a teacher, one or more students, and a course or curriculum that the teacher is capable of teaching and the student is trying to learn. The contract between teacher and learner, whether in a traditional classroom or distance education, requires that the student be taught, assessed, given guidance, and, where appropriate, prepared for examinations that may or may not be conducted by the institution. This must be accomplished by two-way communication. Learning may be undertaken individually or in groups; in either case, it is accomplished in the physical absence of the teacher in distance education. Where distance teaching materials are provided to learners, they are structured in ways that facilitate learning at a distance.

Forms of Distance Education

Print-based individualized study has been a method of reaching the remote student for some time. Detailed course instructions are sent to the learner who performs the assigned tasks and returns the completed work to the teacher for evaluation and reassignment if necessary.

Over time, technology has raised the quality of individualized distance instruction. The use of various forms of electronic media increases time effectiveness and improves the delivery of information. Video, audio, and computer-based applications may enhance the product received by the independent learner. Electronic delivery can occur using synchronous communication in which class members participate at the same time, or asynchronous communication where participants are separated by time.

Video/audio models of distance education include broadcast television, cable television, satellite microwave, fiber optics, and audio graphics. The most widely used format is broadcast and cable television. However, developments in satellite and fiber optic systems have produced other successful programs. The interactive capability of many of these networks has produced a distance classroom that is nearly identical to a regular classroom. Teachers and students can interact through both two-way video and one-way video with two-way audio systems. The recent development of Desktop Video Conferencing (DVC), which brings interactive video capability to the desktop computer, further enhances learning opportunities.

Computer-based technology through the use of the Internet, CD-ROM, or DVD-ROM provides a potentially new dimension to distance education. This technique can link university professors to high school teachers or to physically disabled students in a distance setting. Another form of interaction is the use of computer conferencing. This method utilizes asynchronous communication in such forms as an e-mail list group, an Internet discussion group, or other types of conferencing software. Asynchronous methods of communication are especially appealing to the learner who has difficulty scheduling specific time- and place-bound course work.

Adaptability

Distance education can be used for some aspects of most disciplines. For example, many institutions of higher education already have developed certificate programs, undergraduate programs, and graduate programs in a variety of fields that are delivered using distance education methods.

Even traditional programs that are heavily based in skill development and demonstration or require laboratory work can be offered in a distance education framework using interactive video interfaced with computers to facilitate a hands-on learning approach at a distance. Classes that use lecture and laboratory experiences are easily adapted to a distance education situation. Course materials, including animals for dissection, are sent to class participants with video and written instructions and assignments.

Distance education programs already exist at the University of Wisconsin—Madison, Indiana University, the University of Illinois, the University of Maryland, the University of Southern California, the University of Los Angeles, the University of Nevada—Las Vegas, Virginia Polytechnic Institute and State University, the University of Michigan, Michigan State University, Ball State University, New York University, and many other institutions.

Effective Teaching and Learning with Distance Education

Distance education dictates changes in behavior for both teacher and learner. The successful student develops persistence and skills in self-directing work. The successful distance education teacher becomes conversant with new technology and develops new instructional styles, moving from creating instruction to managing resources and students, and disseminating views. Administrative and faculty support for distance education are critical to the success of this instructional method. Administrators should take note that the implementation of a distance education program may allow access to a greater number of students. However, the time and work associated with teaching at a distance exceeds the normal requirements of campus-based instruction.

Students in distance education settings perform as well or better on assignments, class activities, and exams when compared to campus-based students. Nevertheless, students must maintain persistence and a clear focus to succeed in distance learning. Self-direction, a passion for learning, and strong individual responsibility are important influences on achievement. There are indications that distance education works best for more mature, motivated, well-organized, and already accomplished learners.

M. Garrels in his article on dynamic relationships, describes five critical elements for successful teaching at a distance:

- *Instructor enthusiasm*. This requires animation and comfort in front of the camera or with the technology utilized. Faculty support and interest are critical to the success of distance learning endeavors.
- *Organization*. Teaching materials must be prepared in advance, and timing, variation, and smooth transitions must be planned. Instructors should allocate from three to five hours of preparation for each hour of distance instruction. Great attention to detail is required long before the actual classroom activity occurs (Summers, 1997).
- *Strong commitment to student interaction*. Whatever the modality used to teach at a distance, the instructor must encourage and facilitate ongoing communication between the students and the instructor.
- *Familiarity with the technology used in the class format*. Faculty development is important before beginning any distance activities, and instructors should be trained in video use, computer use, or other forms of instructional technology.
- *Critical support personnel*. Production staff, graphic designers, and technical staff members will help the instructional setting produce successful teaching at a distance.

Conclusion

The potential use of distance education within all disciplines is tremendous as this application to higher education evolves within our culture. Distance education is not a panacea for the difficulties and barriers encountered in traditional educational settings, but it does provide the potential for greater service to more individuals seeking learning opportunities.

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Indiana State University

School of Nursing

Betsy Frank, Ph.D.
Professor of Nursing

Courses

- Research/Theoretical Basis for Nursing
- Nursing Leadership and Management
- Theories for Advanced Practice Nursing

Transforming the Abstract to the Concrete Via the Web

Transforming classroom presentations to a Web-based format presents many challenges for educators. We know that merely typing in the content and adding a few graphics is insufficient. Learners need some way to actively engage in the material presented. For those of us who use multiple interactive strategies in the classroom and make use of those many teachable moments, the challenges may be even greater, but not insurmountable. What follows is a story of how a teachable moment was transformed into a regular hands-on classroom activity in two different courses and then transformed into a Web-based activity in those same two courses.

Imagine a sunny January afternoon in Albuquerque, New Mexico. I was about to teach a four-hour graduate class session entitled "Advanced Nursing Theory." This is a core course in many masters programs in nursing and provides the foundation for learning in nurse practitioner and clinical specialist courses of study. As I looked out my kitchen window at the mountains before I left for class, I realized that the day was clearly too warm to spend all afternoon inside. What could I do? I decided that the class and I should go for a walk. But of course, the walk had to be educational. Thus, the *theory walk* was born.

Students had been having some difficulty grasping the abstract concepts involved in theory development and analysis. A walk seemed the perfect vehicle in which to demonstrate how essential concepts provide the structure for theory development. That warm January day we walked around the nine-hole campus golf course. During the walk we identified the essential elements for our theory of golf courses. We also learned that theory construction builds on prior knowledge. Luckily we had a golfer in the group who could assist us in the theory building that day. In subsequent semesters, theories of neighborhoods, shopping malls, campuses, and restaurants were formulated. Thus, students were able to relate their concrete walk experiences to the abstract task of understanding theory construction and analysis.

These highly successful walks have been incorporated into another course, an undergraduate nursing research course. Students who take this course are junior students who are being introduced to the importance of utilizing research findings in evidence-based practice. In order to utilize findings from written reports of nursing research studies, students must have an understanding of the language of research and the research process—tasks difficult for most undergraduate nursing students. The walk demonstrates to the student how every day concrete hypothesis testing is no different from the abstract hypothesis testing in which a researcher engages. The walk also provides a way for the student to experience the majority of the steps in the research process. Examples of hypotheses that students have tested include: men are more apt to go through yellow traffic lights than women; women are more apt to wash their hands following use of the restroom than men; and blue is the most common color of car in Terre Haute. Along the way, students have learned that all their terms have to be operationally defined so that data collection is precise. They also have learned what influences the data collection process.

How then can these real world walks be transformed to a distance-learning format? Web surfing is the perfect vehicle for this transformation. Students can still set about to build a theory of common phenomena, but instead of walking, they surf through the Web. Just as I provided guidelines prior to the in-class walk, I now must provide guidelines for the *theory surf*. One place I direct students to is Yahoo, a Web portal. I ask students to start with a category such as "Travel" and then surf their way to a more specific theory. Examples of theories using the Web have included a theory of shopping and a theory of car engine power.

In the undergraduate course, I use similar instructions but the focus in this instance is on hypothesis testing. One student, in particular, posited that college Web pages would feature students who were wearing college logo clothing. She viewed 62 campus Web pages in Indiana and even viewed Web pages of universities outside the United States. What do you think she found? Why not surf around for yourself. An-

other student hypothesized that exercise gym home pages were geared to men viewers. Even though she acknowledged that her sample size was small, her hypothesis was born out.

Since the in-class activity involves a lot of questioning of students before the walk and much debriefing following the walk, it is important to provide a feedback mechanism for the Web surfers. When using a two-way television delivery format, the feedback can be similar to that which is provided in a traditional classroom. If students are taking the class via videotape or in an Internet-only format, the Web surfs can be posted on the course discussion board so that other students, as well as the instructor, can comment on the surf results.

I continually look for ways to instill my interactive teaching style into my distance education classes. Although I prefer to teach via the two-way television format, I know that not all students have access to a receive site. Thus, I have to be creative in my approaches to engaging students who take my classes via other modes. I do believe that the learner must have much self-direction if a successful course completion is to occur. However, I, as the instructor, have the responsibility for creating a learning environment wherein the student feels compelled to achieve the course outcomes, not just because the course is required, but because the student finds the course content engaging.

School of Nursing

Veda Gregory, M.S.N.
Assistant Professor of Nursing

Course

- Nursing Care of Families in the Community

First Time Experience Teaching a Course Online

Nursing Care of Families in the Community (Nursing 420) was first offered utilizing two-way television with Web enhancement as the delivery modalities in the spring of 2001. This class is very interactive and depends on student participation. Therefore, I chose CourseInfo's Discussion Board feature as a major means of allowing students to communicate their learning with me and the other students.

The discussion board consisted of focus questions based on the weekly topics. Students were given points for every week that they participated on the board. Each student had to address from two to four questions per class. This method involves a great deal of time for the faculty member to respond to each student and every question. In the future I plan to put the students in groups and have each group work on the focus questions together. Students in a group will communicate and share information through a chat room, and then put the group responses on the discussion board. This should decrease faculty response time, and it will allow students to participate in a group process. The students evaluated the discussion board as very helpful and worthwhile to their learning and their success on the examinations.

Another modality used in the course is video. I learned about the use of video clips at the Course Transformation Academy, an Indiana State University faculty development workshop. I had two videos, which I usually show in class, put into the course through RealPayer so that my students could access and view the content at their own convenience. The videos were very impressive and easy for me to access; however, access was not as easy for my students. The reason for this was that not all the students had RealPlayer and therefore had difficulty downloading the videos. If they were able to download the videos, the process took a lot of time, and the clarity of the videos was not the best quality. The information technology staff at ISU finally put the videos on CDs and provided a copy for each student. This allowed all students access to the videos. I still like this feature in the course and hope that as the students and I become more technically savvy, this modality will be an asset to the course.

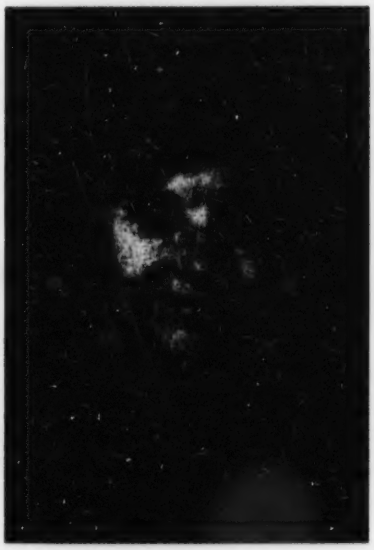
I use essay examinations to test knowledge and so utilized CourseInfo's Course Information feature to deliver the examinations to the students. Most of the students were able to complete the examinations online without difficulty. The major problem for those students who ran into pitfalls completing the examinations online was due to their individual Internet server problems. I just assumed that all students had the same technology features, which is far from the truth. This snag can probably be eliminated if we know, in advance, the technical knowledge and skill levels of our students and also know what hardware and software are available to them. It would be helpful if the University could assist with this aspect.

In addition, I placed PowerPoint presentations and graphic illustrations in the course for every class. Students liked this because it provided reinforcement of the lectures and also benefited the students when they had to miss an occasional class.

Conclusion

The overall evaluation of the Web-enhanced portion of the course was positive from the students and faculty.

School of Nursing



Ann Tomey, Ph.D.

Professor of Nursing

Courses

- Introduction to Nursing
- Theories of Nursing Administration
- Curriculum Process in Nursing
- Administrative Practices in Nursing
- Educational Practices in Nursing

Curriculum Process in Nursing: An Online Course

In the 2000-2001 academic year, I loaded four courses onto the Internet. There is considerable variance in approaches among the courses. I will focus this discussion on the development of my online course, Curriculum Process in Nursing (Nursing 653). I believe the course was developed around an old book that is no longer in print. However, the ISU School of Nursing graduate faculty has approved the course description and course objectives, and I am obligated to use them. I only know of one book about curriculum in nursing currently on the market, and it does not contain some information I think is very important for students to know, specifically about different teaching and learning styles.

Because I have a doctor of philosophy in education, took ten education courses through Walden University by distance education while I was on sabbatical in 1997-1998, and have attended numerous workshops, I have an enormous amount of information about education. Unfortunately it is a hodgepodge. I went through considerable brain strain determining how to present the content in a meaningful way. Nursing 653 is the first course in a two-course sequence, so I needed to think through both courses before I started loading the first course onto the Internet.

I learned about CourseInfo at the Course Transformation Academy, an Indiana State University faculty development workshop. I decided to use CourseInfo because this courseware package offered many of the features that I needed for successful course delivery. Dr. Sharon Guan, an ISU instructional designer, and several student workers helped load the course.

To ensure student success, I knew that I wanted to build a great deal of interaction into my course. The program opens into Announcements so I could use this section to keep my students current. The Course Information section contained the usual course syllabus. I told the students about my personal life, professional accomplishments, and my philosophy of education in the Staff Information section of the program. Appropriate course documents were available for each module. I developed some, some were used with permission from others, and some were linked.

Each week focused on a different module; there were assignments for each week. Students completed a component of the course project each week. Each student could use the Discussion Forum to receive feedback from fellow classmates and the instructor, and then refine that component for the final product. By the end of the course, students had developed their course projects. In the Assignments section, they could sometimes click on the link to an assessment tool such as their teaching style inventory, learning style, or goals. Those inventories also calculated scores for the students. In the assignment, they could click, and go directly to the Discussion Forum for that specific assignment. The threaded discussions were particularly useful because they kept discussions organized and enabled students to participate at their convenience. Each week focused on a different module; this helped keep the discussions focused in a timely way.

Overview of Course

The following offers an overview of my online nursing course, Curriculum Process in Nursing.

Module/Week I: Introduction. During the first week of class, each student is enrolled in the course, confirms an e-mail address, develops a home page, visits other students' home pages, introduces him/herself in the discussion forum, and completes a professional experience questionnaire. Since students taking this course are practicing registered nurses, this survey allows me to get to know my students very quickly. I find out how long they have been registered nurses; where they work; how long they have worked there and in nursing; what they plan to do after graduation; if they plan to further their education; what professional organizations they belong to; what professional journals they read routinely; experiences with research, publications, presentations, and community service; honors and awards received; and long-term career goals. This

gives my students a clue about my expectations of professional behavior, and gives me information for nominating them for honors and awards.

During the first week of class, I also introduce myself to the students and provide information on my personal and professional life, my philosophy of education, and my expectations about preparation for the course, time on task, and the privilege of contracting for a grade. The course syllabus, including course description, course objectives, course calendar, course requirements, readings, and evaluation, are online.

Module/Week II: Curriculum. During the second week, I address components of curriculum, define curriculum, discuss various theorists' views of curriculum development, and present a diagram of the conceptual framework for the course. Curriculum is abstract. Even when I outline the process, it seems difficult for some students to grasp. I depict how sources of curriculum are faculty, students, society, and subjects that lead to the general goals, which are screened through philosophy of education and psychology of learning to determine: the educational objectives; selection and sequencing of content; selection of learning experiences; selection of audiovisual materials; and evaluation to determine if the student has learned. I then design the course modules around the conceptual framework.

Module/Week III: Faculty. In this module, I ask students to do a teaching style inventory. They become aware of their own style and whether they prefer to be formal authority, demonstrator, facilitator, or delegator. Although we have a predominate style, we can adjust our style to fit the level of students and circumstances.

Module/Week IV: Students. In the fourth week I address principles of adult learning; visual, auditory, and kinesthetic ways of learning; and multiple intelligences—linguistic, logical/mathematical, musical, bodily/kinesthetic, spatial/visual, naturalist, intrapersonal, and interpersonal. We also consider theories of human development throughout the life cycle. The students do a learning style inventory to become more aware of their own styles, and to discover that that we do not all learn in the same way. These differences mean that a variety of teaching strategies is important. Students also describe the students they expect to be teaching.

Module/Week V: Society. In this module, we consider our society's and profession's expectations of our graduates. Areas stressed include: the basic skills of reading, writing, arithmetic, listening, and speaking; the thinking skills of creativity, decision-making, problem-solving, visualizing, reasoning, and knowing how to learn; and the personal qualities of responsibility, self-esteem, sociability, self-management, and integrity. We discuss the instruction to learning paradigm shift.

ModuleWeek VI: Subject. During this week we consider expected competencies and accreditation criteria. Students are asked to design course placements for the course project, to do at least one course description, and to identify course outcomes for the course project.

Module/Week VII: Program Goals. Students take a teaching goals inventory to determine if they think (according to what they plan to teach) the following skills are: essential; very important; important; unimportant; or not applicable:

- Higher-order thinking skills
- Basic academic success skills
- Discipline-specific knowledge and skills
- Liberal arts and academic values
- Work and career preparation
- Personal development

Teaching goals may differ from one course to another. In this module students look at program objectives via course documents, and write curriculum or course objectives for the course project.

Module/Week VIII: Philosophy of Education. Students, in this module, consider various philosophies of education, a program philosophy, and their own philosophy of education.

Module/Week IX: Psychology of Learning. There are numerous theories of learning. (In previous classes, we found more information on the Web than in textbooks.) Here, students are asked to describe how psychology of learning influences their teaching.

Module/Week X: Educational Course Objectives. Throughout the course, I relate the module objectives to the course objectives. In week ten, students write program or course objectives.

Module/Week XI: Selection and Sequencing of Content. We consider, during week 11, the following: general to specific; known to unknown; concrete to abstract; simple to complex; facts to principles; principles to applications; most to least important; part to whole; whole to part; chronological order; and established order of steps. Students sequence the content they plan to teach.

Module/Week XII: Selection of Learning Experiences. Students select a learning experience for a lesson plan.

Module/Week XIII: Selection of Audiovisual Materials. Students select at least one audiovisual aid for a lesson plan.

Module/Week XIV: Evaluation. Students select or develop an evaluation tool to determine if students have learned the content.

Module/Week XV: Project Submission: At this time, students submit their class projects of a curriculum and/or course syllabus they have been developing throughout the entire course. The students are now also prepared for the sequence course, Educational Practices in Nursing (Nursing 673) in which they implement lesson plans.

Module XVI: Course Assessment. Students are asked to reflect on insights gained during the course and to discuss what a difference those insights made in their lives. Students also are asked to do formative evaluations of each module. What questions did they have? Were they unclear about anything? Were the instructions clear? Was the sequencing logical? Were

there gaps or holes in the content? What could have made the experience better? What was the favorite part of the experience? The formative evaluations were particularly important for the first run of this course.

One student commented that the course was "lonely but time-effective" and appreciated meeting on campus. Students were invited to meet on campus at the beginning and near the end of the course. All attended. All of the students lived within an hour of campus and were primarily taking the course as a new experience. I called each student at the beginning, middle, and end of the course. We also e-mailed each other.

Student summative evaluation comments included:

"I have gained a much better understanding of what is involved in developing a course curriculum—especially that end outcomes must be determined in the planning phase to guide the curriculum development."

"The learning and teaching self-assessments were helpful in learning about my own teaching and learning preferences, as well as what techniques and methods are most effective for others. I see now the importance of doing a learning preference assessment prior to an educational program. I've enjoyed learning how others can learn. It has made me more aware and accepting of the learning styles of others."

"The most significant learning I accomplished this semester dealt with active learning and the changes in instruction to learning."

"I got a lot of insight into what kind of teacher I would like to be. There is a lot more to teaching than just giving facts and information."

Students enrolled in the first run of this course were generally pleased with the course, felt they had learned, and felt prepared for the sequence course.

This is a course in process and transformation so suggestions for ways to improve it are welcome. Comments can be sent to a-tomey@indstate.edu

School of Technology

David Malooley, M.S.

Associate Professor of Electronics and Computer Science

Courses

- Programmable Logic Controllers and Control Systems
- Industrial Electronic Current Control Systems

A Technical Class Via Distance Education? How I Make It Work for the Student

When I was first informed that I would be teaching a distance education course, my initial thoughts turned to my need to quickly register and attend the Course Transformation Academy, an Indiana State University faculty development workshop, in order to learn how to utilize the CourseInfo software program. Upon completion of the CTA, I thought I was ready. I had all the tools necessary to create and successfully deliver a top-notch distance education course. For years, I had been using Microsoft Office to create a variety of printed materials and on-screen presentations. I had previously used PowerPoint in several industrial training presentations and could even create my own backgrounds and animations on the PowerPoint slides. I was ready to go and truly excited.

The first course I was assigned to teach via distance education was to be a television course offered through the Indiana Higher Education Telecommunications System (IHETS). Having just moved into the new John T. Myers Technology Center, with its fully equipped IHETS studio, I was fully aware of the capabilities and limitations of this studio. The studio was equipped with the full range of audiovisual and computer technologies, including both PC and Macintosh computers. A touch screen monitor would allow me to quickly select the sources between the computers, videotape, slide, or the ELMO, which is a mounted camera to be utilized like an overhead projector. I took the time to attend two or three course presentations by other faculty members and spoke to many others about their delivery techniques and the problems they had encountered. Throughout the learning and the analysis process, I had that uneasy feeling that this was going to be much more difficult than anticipated because the current technologies used in the studio just did not fit my teaching style.

If I had to define my teaching style, several aspects would necessarily be included: animated, student-centered, reliant on active discussion, and couched in real world, practical examples. I am a firm believer in providing students with in-depth material that exceeds and explains in greater detail than that which is found in the textbook. I do not like to simply lecture and then test the student on the content. I like to present hands-on practical material with both visual and tactile experiences for the learner.

The assigned course, Industrial Electronic Current Control Systems (Electronics and Computer Technology 448), is very design intensive. Large quantities of mathematical modeling designs are learned throughout the semester. Numerous examples of the design technique must be presented, analyzed, and discussed in great detail. Practical circuits and components also need to be examined and presented throughout the course. Careful examination of the studio quickly convinced me that the facilities did not exist that would allow me to accomplish these goals.

The first obstacle to be overcome was the inability to discuss things in real time. My step-by-step designs, presented via a PowerPoint presentation, are fine until students begin asking questions. At this point, the instructor typically will resort to using marker and paper on the ELMO. For the distance student, who is sitting near a television screen, this may be fine if they can see what is being written clearly because of their proximity. However, there is normally a contingent of students sitting in the television studio who are also attempting to read what is on the screen, but from a distance of six to 20 feet. As an instructor, you are left with but two choices: write small so that you can get it all on the page (in which case the student sitting in the class with you cannot see it); or write large enough so that it may be seen (in which case, it takes several pages to work through one problem). Both I deemed as unacceptable. It is impossible to follow the procedure through unless you can see it as a unified problem. To simply go back over the just presented PowerPoint slides would serve little or no purpose either. A detailed explanation to the students was what was needed, along with a well worked out solution and a step-by-step example.

The solution to the problem was to have a good, old-fashioned blackboard on the wall upon which detailed explanations could be executed. Of course in today's modern technology, we no longer use blackboards, but have moved on to

utilizing new dry erase marker boards that typically have a light surface. This presents its own problems because you cannot have a light background behind the faculty member who is on television; the lack of contrast is not functional for broadcast quality. Even if the use of this low-tech solution would suffice for the students sitting in the studio, then the roles would be reversed because the students at the distant sites would no longer be able to see the material being presented.

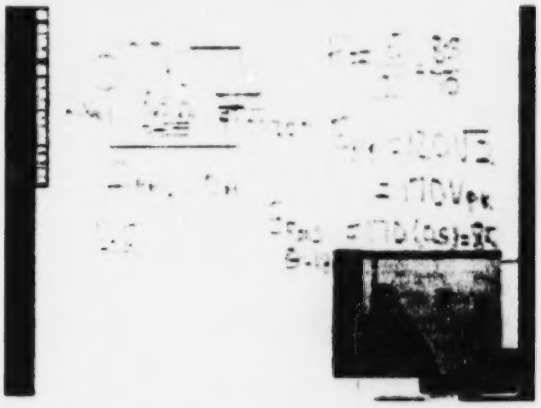
The solution was found after a substantial amount of research using the World Wide Web. For a number of years, I had been aware of the existence of whiteboards that could be attached to a computer. Many of these gave a printout of the material drawn upon them when finished. What I needed was one that would be mobile and could give real-time output in a format that could be transmitted via IHETS to the distant sites, provide for full-color display, and create a file that could be downloaded to the Web site for students to utilize as needed. Checking through the specifications of the many companies offering electronic whiteboards, I found one in particular called SoftBoard™ that fit every need and had the added plus of being a hard, steel surface that could not be damaged like many of the membrane or plastic surfaces most boards use.

The whiteboard tracks the motion on the surface with a scan of lasers in a manner similar to that used to scan groceries at the checkout counter. The color of the markers and position are accurately recorded as you write or draw at normal speed on the surface. The whiteboard even captures script and intricate drawings with an amazing degree of accuracy. Being steel, it has magnetic strips of icons for the controls found on the computer screen, such as begin recording, stop recording, and new page. This is most beneficial because the instructor no longer needs to return to the computer at the podium, but instead can make all necessary commands from where he/she is. This allows for a much smoother presentation on camera because the instructor is not making frequent back and forth motions across the room, and is not constantly being lost to the camera—a situation which frustrates the director. To add this new technology, a connection was needed to the podium computer; arrangements to have a connector added and brought out from the communications port on the PC were made, along with access to power to drive the board itself.

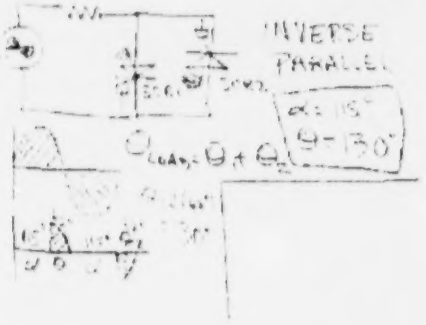
My absolutely outstanding director, Bob DeFrance, offered many helpful suggestions such as leaving a square open on the bottom right portion of the board so he could insert me as a picture-in-picture. This technique enabled students at distant sites to see me at all times when I was at the board drawing. Bob was a real asset. As I rapidly moved between PowerPoint material on the Mac, the ELMO showing components, and the SoftBoard™ on the PC, Bob kept me aligned in the opposite corners of the screen.

At last, students at the distant sites could see me, see what was being presented on the board, and later even download the content from the board as a printed document or as a file to their own personal computer. The students sitting with me in the classroom also had all the advantages of a traditional class and the same ability to download the material at will. To me, this was a true advancement in the use of technology. Students everywhere had the same advantage point. Students were no longer trying to see or trying to make detailed copies of what was on the board; they knew it was available for them to capture in full-color detail later. This was especially helpful to several students because they could pay closer attention to the progression of the problem rather than trying to watch, listen, and copy it down at the same time.

A side benefit of the software used by the board is that it actually records motions in real time, thus allowing for playback on the computer. As I posted problems to the Web site, I could make a step-by-step set of files with as much "in between" detail as I desired. The following picture, captured from the videotape of one of the classes, shows the set up and actual use of the unit during a lecture.



The following is a download from the Web site of data from one of the posted boards:



As I progressed through the semester, another problem with the presentation was the inability to demonstrate active circuits to either cohort of students—those with me in the studio or those at the distance sites. As it turned out, I had one student in Atlanta, Georgia taking the course entirely by videotape. Once again, the typical technique was to try to put a circuit on the ELMO and then use PowerPoint slides to try to explain what should be happening as power was changed or a potentiometer was turned. This was acceptable, but I really wanted my students to experience the actual live experiment.

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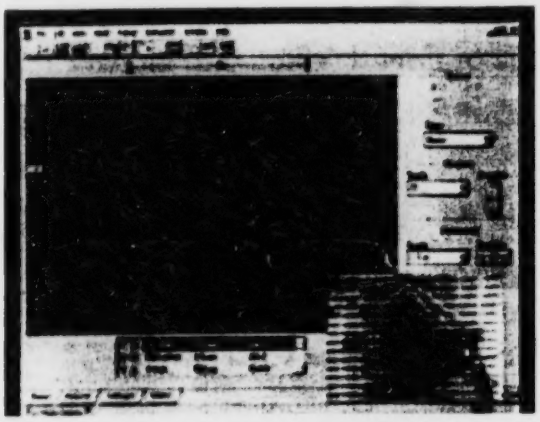
Once more, I turned to adding technology to the studio by interfacing an oscilloscope with the computers on the podium. Bob DeFrance held his breath as I brought in components, circuits, power supplies, cables, and additional software needed on the computer and began to hook it all up prior to the broadcast one day. Sometimes you just have to trust someone and hope that they will not destroy your studio in the pursuit of new delivery technologies.

In less than an hour, we had transformed the studio into an interactive laboratory. My students could see the components in the circuit in exacting detail as I zoomed in on them using the ELMO and explained each in depth, using a laser pointer as I went. Then as I connected power to the circuit and adjusted the potentiometer, my students could watch the television monitors as the oscilloscope displayed the resulting waveforms in color detail on screen. Each change of the oscilloscope probe position to another location in the circuit examining another test point was clearly seen by every student. This relocation resulted in the new waveform at that point being displayed; the effects of adjusting the value of the potentiometer were immediately evident. Below is an image captured from the videotape of one of these class presentations that shows the scope screen and the picture in picture circuit itself.



In conclusion, the addition of these two new technologies to my course allowed me to do what I love to do best—teach. I believe my use of these technologies enhanced the experience of every student—wherever they were sitting—and made the learning process richer and more enjoyable. I know it did for me.

Please note: SoftBoard (formally Microfield Graphics, Inc.) is a Division of Polyvision Corporation.

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Course

- Research Methods in Industrial Technology

Linking Audio to a Web Site

Adding audio to a Web site will enhance teaching efforts in several ways. Unlike video, which requires a significant bandwidth to have even the slightest chance of working (to date), audio streaming delivers exceptionally well over the Internet. Students will be able to start the audio clip, and go right on working on other programs as they listen.

When adding audio, there are two basic elements that need to be put together: a *Web page*, and *an audio source*. Creating Web pages used to require html knowledge. Now, a page can be up and running in just a couple of hours. In setting up a Web page, ask the webmaster for a simple page and enough space allocation for saving audio clips. An online provider such as Yahoo can also be used. It is very common for online services such as Yahoo and Netscape to give free Web pages to those who register for e-mail. There is usually a one- or two-page questionnaire to fill out.

The audio source can come from any device. A cassette recorder will work just fine. For lectures currently coming from a distance education broadcasting room, then the audio portion of the videotape is ideal. This is actually the best scenario because chances are slides have been developed to go with the lecture. If this is the case, then the slides can be easily placed on the net and added to the audio; then students can listen as they click though the slides—at their own pace.

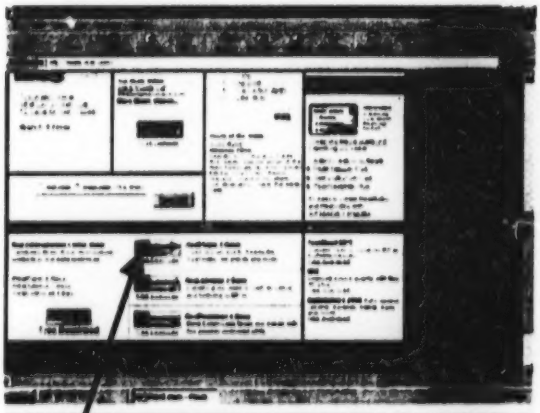
Instructions

The following instructions have been written specifically for those instructors who are lecturing from a distance studio or television classroom. For those who do not have the advantage of utilizing a television studio to capture the lecture, the audio can be recorded with a simple cassette recorder.

Suggested Equipment and Software

- A media recording and playing device. For classes delivered via television, use a copy of the videotape plus a video player.
- Cables to connect from the audio output of the media device to the input of the sound card.
- **RealPlayer*** for playing back the audio. *This is a free download.*
- **RealProducer*** for recording and creating the necessary files. *This is also a free download.*

*Other software products are available that can play and record audio for streaming over the Internet. I suggest using REAL products because their basic versions could serve as a common denominator among students, and the programs are free.



This is the first program needed. Real.com changes their site often so browsing a little may be necessary to find it. As of February 1, 2001, the free player program was near the bottom of the Real.com opening page.

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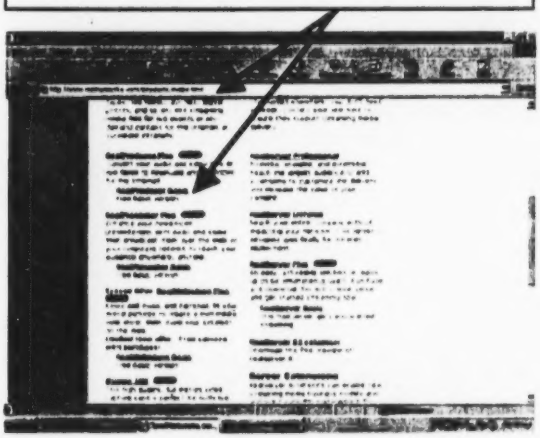
As of February 1, 2001, the free version of Real-Producer was found near the middle of the address.



Creating the Audio File

- Open the **RealProducer** program by double-clicking on the icon.
- Fill in pop-up menus for the type of media being used.
- Set the input volume level so that the red can occasionally be seen.
- Press the record button.
- When finished, press the stop button.

Linking Audio

- After recording the audio, go to the desktop.
- Space click with the right mouse button. In other words, click in an open space; then select *New, Text Document*.
- A *New* text icon should appear; double click the *New* text icon
- Type in: http://xxx.xxx.xxx/xxx/xxx.rm

(This is the individual Web site followed by the audio file name.)

- Save as XXX.txt

(The XXX is the name of the audio file less the rm extension.)

- Right click on the *New* icon "xxx.txt"
- Select *Rename*, and rename it "xxx.ra"

(The new ra extension is the key to why RealAudio streaming works so well. The end user only downloads the ra (text) file, which triggers the rm (audio) file to begin streaming. Therefore, if all works well the end user should not experience any buffering.)

- In Netscape: fttp://xxx@xxx.xxx

(I am using Netscape as a file transfer program used to upload and maintain the Web page. The address should be the actual server site address for uploading files. Ask a webmaster for this address if one is not maintained.)

- Reduce the window; drag the files in—both the xxxx.rm and the xxxx.ra
- Do the normal linking. Example: *http://xxx.xxx.xxx/xxx/xxx.ra*

(Now that the two required files have been placed into the server space, a link to the ra file can be created using the same procedures that link any page or object together using whatever software is familiar.)

Benefits of Audio

Audio offers a variety of ways to enhance courses, including the ability to:

- Add explanations to assignments
- Make revisions or corrections
- Add a real, live dimension to a dull, asynchronous learning environment
- Narrate a virtual tour through key resources on the Internet

Best of all, tremendous amounts of audio information can be put on one hyperlink. Once this process has been learned, it will become routine. The result will be having only one Web page to maintain.

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